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MUSCLE TREATMENTS IN EXOPHORIA

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The subject of exophoria has been discussed from time to time by many writers and investigators and the conclusions reached by them vary to the same degree as do their methods of treatment and exercise.

It may be of interest to review here briefly some of the methods of muscle exercises in exophoria as used by some of the leading practitioners, and the results obtained from using these methods. While of late muscle treatment especially in exophoria has received more attention than it has at any time in the past, yet a careful study from a critical standpoint of the methods and results in the following pages of this review will reveal that the ideal method and technic for muscle treatment is still to be discovered. This should act as a stimulant to optometrists to do a little more research work and investigation with the aim of devising a method or technic in muscle treatment, that will more nearly approach the ideal, than the methods used at the present time.

Searching the literature on this subject one finds that many of the leading practitioners have given little or no attention to this phase of the work. DeSchweinitz devotes less than one page to this subject; Noyes, one page; Schmidt-Rimpler, a few lines; Fuchs, Berry, Landholt, Schweigger, Nettleship, Juler and Carter ignore the subject entirely.

The degree of success obtained in muscle treatment seems to depend largely on the methods used and the amount of time spent by the practitioner as well as by the patient.

Noyes, writing on this subject, explains his method of treating the muscles as follows: "He (the patient) takes a candle flame or the door knob at 20 feet as his object, and performs the efforts of adduction and abduction by means of these prisms. He begins, say, with adduction and first holds the prism of five degrees, with base out, before one eye; then substitutes the 10-degree prism; then before the other eye places the five-degree prism, making a total of a 15-degree prism; then if practicable substitute the other 10-degree prism for the five; and so climbs up the ladder of adducting prisms by such steps as he can make. If the interval of five-degree prisms becomes too great he may take that of 2½ degrees." Exercising the externi Noyes advocates using weaker prisms, base in. The exercise he advises to be continued not longer than ten minutes at each sitting and that it be repeated not oftener than twice a day, until, in the case of the interni, a prism of 42½ degrees can be overcome, and in case of the externi a prism of 10 degrees. The prism of maximum strength having been reached, its use should be continued once daily, for a time.

Treating with Weak Prisms

Dr. Charles E. Michels of St. Louis has persistently practiced the development of weak internal recti muscles by means of weak prisms base out. The prisms used by him have not been stronger than four degrees nor weaker than one degree. Beginning with the weaker prism, the patient is directed to exercise frequently (ten to fifteen times) during the day, each period of exercise to last only from four to five minutes the first few days; later they are to be worn only four or five times daily, increasing the time of exercise from two to five minutes daily, until they can be worn comfortably for one hour. When the patient, viewing a distant object, becomes able to wear the four-degree prisms one hour without discomfort, he is directed to commence reading. At first he must read only from three to five minutes daily, until he can read comfortably for one hour, four times a day. When this can be done, the patient is directed to continue for several months, the reading-exercise practice, from a half to one hour, two or three times daily. To suit individual cases modifications as

to the length of time and strength of prism and frequency of exercise must be made.

Fully 60 per cent of Dr. Michels' patients had their full muscular power developed under this method of treatment, and were enabled to use their eyes with comfort; while 25 per cent had a greater or less gain in comfort, and 15 per cent did not derive any benefit at all from the treatment. Dr. Michels always corrected the refraction first, before giving any treatment, and the patient was instructed to wear the correction while using the treatment prisms.

Dr. Stevens' Method

Dr. George T. Stevens of New York, in discussing muscular treatments, states that "adduction may be greatly improved by gymnastic exercise of the interni, by means of prisms. In these exercises the eyes are required to unite images in overcoming gradually increasing obstacles. A prism of a few degrees, perhaps, is placed base out before one of the eyes while gazing at a lighted candle at 20 feet distance, when an effort is at once made to overcome diplopia. As soon as the images are blended, another prism, of perhaps less degree, is placed in the same manner. The images being united, a stronger prism takes the place of those already in place, or one is added to those already in position. Then, little by little, the eyes are required to overcome prisms until the images can no longer be united. Then all the glasses are removed and the process is repeated, with each repetition something may be gained. The exercise should not be continued, at a single sitting, more than five or six minutes; and only a single sitting a day is desirable. By this means the adduction power can, in most cases, be raised, after a few exercises, to the desired point. The effect of such exercises upon the eyes is very often extremely salutary. With greater freedom of muscular action comes a sense of relief from nervous strain, which is often of a most gratifying character. Such an exercise is in no way related to the practice sometimes adopted, and which should be condemned, of requiring the patient to gaze for a long time at a near object."

Dr. Savage's Rhythmic Exercise

Dr. Savage advocates two systems of exercise for the interni; both of them are rhythmic in their nature and they can both be used jointly or in unison. Dr. Savage's systems of exercise are: (1) the Wax Taper method, and (2) Prisms Base Out method.

The exercises with the taper (small wax candle) must be conducted, to use Dr. Savage's own words, as follows: "The patient is directed to light the taper and hold it at arm's length from and on a plane with the eyes, immediately in front of the face. Fixing his vision on the flame, he continues to look at it while he brings it slowly to within seven inches of his eyes, holding it there about two seconds. He then closes his eyes for a moment (at the same time moving the candle to the side) and, on opening them, fixes his vision on some distant object. The same procedure is gone through a second time, and so on from five to fifteen times at one sitting. The sittings may be repeated one or more times daily for weeks or months. The best time for this exercise is early in the morning, while the muscles are fresh from sleep. In many cases the morning sitting will be sufficient for the day. This is especially so if the exophoria is low in degree. Reading or other close work should not be done within the hour after which the exercise is taken."

"In this taper exercise no one can doubt that the guiding sensation compels the internal recti to contract, in obedience to the law of corresponding retinal points, as the light advances, the maximum of contraction being reached when the taper is seven inches from the eyes. On closing the eyes, partial relaxation of the interni occurs and the moment the eyes are opened and the vision being fixed on a distant object, the relaxation becomes complete, in quick response to this guiding sensation. Thus is brought about contraction and relaxation, which should be discontinued short of fatigue. That is, rhythmic exercise properly regulated as to frequency and force, will develop the internal recti and is susceptible of demonstration on the part of any one who wishes to know the truth."

"The second method of developing the interni is by means of prisms base out. The prisms to be used may be from one to eight degrees, and one should be placed before each eye. The treatment should be commenced with the weaker prisms, and as development of the muscles advances the stronger ones should be brought into use. The object looked at should be a light fifteen or twenty feet distant. With the prisms before the eyes the image in each eye is displaced out, when the guiding sensation calls quickly into action the interni for fusing them. After three seconds the interni must be allowed to relax for the same length of time, which is really effected by lifting the prisms up and allowing the light to enter the eyes uninfluenced. The guiding sensation at once causes the relaxation to take place, so that the yellow spots may receive the images. At the end of three seconds the prisms are again dropped before the eyes, when the interni again contract. Then a second time the relaxation is effected by lifting the prisms, and so on throughout every sitting, which should last from two to ten minutes, but should always be discontinued short of fatigue. The sitting should be repeated two or three times a day. While it will take weeks, if not months, to establish ortophoria, nevertheless the end can be attained, in suitable cases, by this method. It may be better in most cases to resort to the two methods of development, the taper and the prisms, each day, but not at the same sitting."

Drs. Gould and Deady, Strong Prism Method

In contrast with Dr. Savage's method of using weak prisms to exercise the internal recti muscles Drs. Gould and Deady advocate a method of treatment whereby strong prisms were used for the same purpose. The exercise is carried on in this manner: The strongest prism base out that can be overcome is placed in front of the eyes and the light is first held at 20 inches from the patient. The light is carried from the patient or the patient recedes from the light until a distance of 20 feet intervenes. The prism is then raised and relaxation takes place. The same operation is repeated again and the exercise continued from three to five minutes, the powerful contraction and complete relaxation following each other every seven seconds. The periods of exercise are to be repeated several times a day. Very strong claims have been made for this method, but the most ardent advocates confine its use to the treatment of exophoria.

Treatment of Exophoria with Minus Lenses

When the exophoria is pseudo in character concave lenses will be a source of relief. Dr. J. J. Chisolm of Baltimore has been prescribing for many years concave cylinders when his patients had hyperopic astigmatism and exophoria, and it is claimed that these exophoric patients were greatly benefited. Many practitioners are prescribing minus spherical corrections in the presence of exophoria where plus is otherwise indicated.

Prescribing Treatment Prisms

Dr. Ernest E. Madox states that he has often given young people a second pair of spectacles resembling those they wear, but with adverse prisms incorporated, and bid them wear these training spectacles at certain favorable hours of the day. As an alternative to this one or two "grab" prisms can be slipped on to the spectacle for ordinary wear. Whenever the prisms are more easily overcome in near than in distant vision they can begin by looking at a point on the wall close up to it and then receding to the other end of the room, repeating this again and again early in the morning or after breakfast or any time before the eyes are tired. When glasses are not worn he advocates the use of prisms set in circular rims, so that as the reflex is strengthened the base apex line can be made to lie at greater and greater angles to each other by rotating the prisms in the frame.

Rotary Prism Treatment

The double rotary prism unit, or the Risley prisms, as found in the modern phorometer, needs no introduction to present day refractionists, as it is with this instrument that most of the duction and tonicity tests are made and muscle treatments given. Robinson, in discussing muscle treatments, which he calls Oculo-Prism Treatments in his text under this name, fully explains

the technic of this work with the Risley prisms. In brief it consists of placing the rotary prism before the non-dominant eye, the patient fixing a light at six meters. The prism is then turned base out until diplopia exists. It is then slowly turned back until the patient is able to fuse the two images. This is repeated from five to ten minutes daily until the patient can fuse 40 prism dioptres. Koch in a paper on this same subject calls the above mentioned technic the "pull-treatment," and adds what he terms the "shock-treatment" and the "retaining-treatment," both forms being given with the Risley prisms. The shock-treatment is given to the patient after the patient has acquired at least 24 prism dioptres of adduction with the pull-treatment, and is administered as follows: The patient is instructed to close his eyes and from 12 to 16 prism dioptres, base out, is rotated in place before his eyes; the amount is usually equally divided between the two eyes. The patient is then requested to open and bring the two images together. This form of treatment is continued daily, alternating with the pull-treatment, increasing by small amounts until the goal of 40 prism dioptres is reached. The retaining-treatments are then started, the patient being required to fuse and hold, for periods varying from three to five minutes, 20 prism dioptres base out, this latter technic intended to develope the quality of the muscle innervation.

Hazen's Kratometer Treatment

Dr. E. H. Hazen approached this work in a somewhat different manner —that of developing the fusion faculty by increasing the size of the area of the fusional centers on the retina, by stimulation with an instrument which he devised, called the kratometer. This instrument consists of a metal stand upon which are mounted two circular discs, one for each eye. Within these discs are mounted prisms varying from five to 25 prism dioptres, with five prism dioptre separations, and also a double prism and a maddox rod. These discs have grooves provided to hold the auxiliary prisms which are mounted in separate metal strips. The first strip contains prisms varying from one to 15 prism dioptres, with one prism dioptre separation. The other strip contains prisms varying from ¼ to 3¾ prism dioptres.

The technic of the instrument is described so nicely by Dr. Hazen that I shall quote him in full as follows: "The circular battery prisms are first started over the right eye, five degrees base out, then five degrees base out over the left eye and as many of these five-degree jumps are turned on until the patient says, 'Two lights that will not fuse'; then turn back to the interval over either eye or both until he says 'one' and insert the sliding groove battery of one degree intervals base out over either eye most convenient for your manipulation, increasing each degree until patient says, 'Two lights that cannot be fused.' The last degree of prism that the patient said one, plus the total degree in the two circular jumping batteries, is the total strength of prism held during the first exercise to be recorded." This procedure is continued daily for about ten minutes at each visit.

Hazen advises building up the nerve innervation of the internal rectus muscle to a point where this muscle can easily overcome 50 prism dioptres base out and in most cases of convergence weakness or exophoria this can, with the aid of the kratometer, be accomplished in about three weeks, the patient coming daily for treatments.

Stereoscopic Treatments

Many different makes of stereoscopes are being used in giving stereoscopic treatments. Dr. David W. Wells suggested the use of the phorometer stereoscope, which is probably the most practical for this work. The principle of decentration is here applied. The phorometer is so set that a +10 dioptre lens is in front of the eyes, so that an object would be in focus at 10 centimeters. If the separation is such that it corresponds to the pupilary distance of the patient's eyes, no prismatic element is then present. If the pupilary distance is then increased or decreased by one m/m there will be produced a prism of one dioptre base in or out according to the direction of the decentration of the lenses caused by the change of the pupilary distance. If the plus spheres are decentered out of five m/m these lenses will have the effect of five prism dioptres base out. The same amount of prism base in would be produced if

the plus spheres were decentered five m/m in. As the pupilary distance in the phorometer may be adjusted from 50 to 75 m/m it follows that 10 degrees of prism may be utilized by this principle of decentration. Besides the prism power produced by the decentering of the plus spheres, five prism dioptres base out is turned on from the rotary prisms. A set of cards to be used in stereoscopic treatments is published by Dr. Wells. There are different cards to be used for different kinds of treatment and degrees of imbalance. Dr. Wells in his text offers various methods of muscle treatment with the stereoscope for home exercises.

Worth's Amblyoscopic Treatment

Gratifying results are at times had from using the amblyoscope in muscle treatment, Higley particularly being strong in its praise. The amblyoscope, by Worth, consists of two tubes equipped with lenses and mirrors so arranged that they may be adjusted at different angles, thus making the amblyoscope a very valuable instrument for fusion training and developing the weak muscles. The instrument is used as follows: A set of cards are placed in the grooves; say the set which consists of the letters "F" and "L"; the tubes are then so adjusted that the letters "F" and "L" fuse together and form the letter "E." In cases of exophoria the tubes will have to separate considerably so that prisms power base in will be used to fuse the two letters. When this is accomplished the position of the tubes is altered, thus reducing the prism power until the two letters become separate again. The patient is then instructed to try to fuse the letters again to form another "E."

The amblyoscope, while simple in construction and in operation, offers a very wide field for the study and treatment of cases of heterphoria as well as cases with a weak fusion faculty. It is easy with this instrument to diagnose whether a patient is having weak ductions or a poor fusion faculty or both. A patient having weak ductions only will be able to fuse different pictures on the slides readily as soon as the tubes are so adjusted as to give him sufficient prism power to bring the two objects together; however, when the fusion faculty is weak or undeveloped, the patient will have great difficulty in fusing the two images readily even when sufficient prism power is supplied.

The writer had considerable experience in treating a number of cases that had a very poor fusion faculty besides a considerable amount of heterophoria. One case particularly with a very poor fusion faculty it was next to impossible for the patient to fuse the images of any two slides placed in the amblyoscope even though prisms were given to correct the lateral and vertical muscle imbalance. It took the patient five treatments on five consecutive days before she could fuse the set of slides, No. 2a and 2b, which are made up of the letters "F" and "L." Next, it took her two weeks to fuse the slides of the set 6a and 6b, which is made up of a series of lines which when fused make up the letters "X," "Y" and "Z," and it took her more than three weeks before she could fuse the slides in the sets 15a and 15b. The same was also true with set numbers 16a and 16b. But after the fusion faculty has once been developed it was then an easy matter for the patient to fuse any set of slides instantly.

The several methods of muscle treatments reviewed in this paper are only a few of the great number advocated by various writers. However, the few methods mentioned here will be sufficient to show the disagreement on the subject of muscle treatment between the various investigators. None of the methods mentioned are free from criticism and in all of them the technic could be improved. And also, in a measure, we lack the proper diagnostic knowledge. While it is true that many cases of 25 and 30 degrees of exophoria have been successfully treated, it is also true that in some cases with a high degree of exophoria the treatment did not bring any relief or improvement. We have at the present time no means which will enable us to tell whether or not a case of exophoria will benefit by administering muscle treatment, and some study should be undertaken along this line.

When muscle treatment is advised, the patient is naturally anxious to know whether the treatments will or will not help, in his or her case. The

practitioner is unable to make a definite positive statement in many cases, and will not be able to do so until a closer study is made of the need for muscle treatment and until the results from these treatments are correlated. Another important factor is the time element entering into muscle treatment work. Some authorities claim that muscle treatment to be successful, in some cases, must be carried on once or twice daily for weeks and months. People today, whether they be business, professional or working people, find that the time element is of great importance. Many who need muscle treatments can not afford them when they consider the possibility of having to go to the office of a professional man daily for weeks or maybe months.

In order that muscle treatment work be more successful and to make its technic more popular with the public the following improvements will have to be made:

1. Improvement in the technic of muscle treatment so that it may require less time to get the desired results.

2. To devise an objective method of treatment instead of, or along with, the present subjective method.

3. To find a new method of scientific diagnosing so that the practitioner may be able to tell after the examination whether or not this particular case will derive any benefit from muscular treatment.

Any one of the three optometric problems enumerated above offer a wide field for study and research, and as optometrists it becomes our duty to solve these problems as soon as possible.

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NOTES, CASES AND INSTRUMENTS

THE GIANT OPHTHALMOSCOPE

C. H. Kerr, Camden, New Jersey

One of the first practical electric hand ophthalmoscopes was placed upon the market nearly 25 years ago by Mr. Harry De Zeng. Since then the instrument has been made in many different forms, but in none of them has the illumination been materially improved or strengthened over that of the original instrument.

Realizing the advantages to be derived from improved ophthalmoscopic illumination, we here at the De Zeng plant, have developed this new Giant Ophthalmoscope which is fitted with both Red Free and Daylight producing screens, a two-part total-reflecting mirror and a high power illuminating attachment.

A special six-volt lamp with ¾-inch clear globe is employed in conjunction with a scientific system of high power light condensers. A highly concentrated illumination is obtained having a sharply projected, short, anterior focus. The lamp is supported in a ball socket located in the end of the handle. A knurled retaining ring serves to hold the lamp in any position of adjustment when screwed down upon the ball.

A thin metal casing having two large side ports surrounds the lamp and forms its chamber. This casing is provided with an external rotatable shutter for closing the ports against the egress of light when so desired. A cone-shaped light tube is connected with the upper end of the lamp chamber by means of an insulating ring. This tube supports the ophthalmoscope case with its rotatable disc of lenses and the mirror. Within the lower end of this tube and immediately above the lamp, a pair of short focus condensers is mounted in an adjustable sleeve and by means of a longitudinal slot in the tube and a knurled extension nut, the condensers are placed and held in the required position of adjustment.

Another short focus condsening lens is stationarily mounted in the upper end of the light tube, and on either side, a pivotly mounted ring carries a light filter. One of the rings has a Red Free filter and the other a Daylight filter and by swinging either of them over into position, in register with the condensing lens, either a Red Free or Daylight illumination may be obtained. This arrangement gives the ophthalmoscope three different illuminations with rapid interchange of all.

The mirror is located close to the end of the light tube and is composed of two separate metal reflectors, which lie in different places with their inner edges spaced apart. They resemble the shutters of a blind, which, while excluding the direct light from the sun, do not obstruct the view. This improved type of mirror offers an unbroken reflecting surface to the illumination and in consequence not only becomes a total reflector conserving the light, but gives a greatly increased visual aperture to the observer as well. It also has the desirable proportions of minimizing the corneal reflex and admitting a clear and unobstructed view for peripheral examinations. The ophthalmoscope has a single disk of lenses, all of which are securely held by a thin metal retaining disk. They range in dioptric power from plus 16 to minus 20. The case has a dustproof cover and a ball stop which gives care to manipulation and exact location to the lenses when in position at the peep opening. The handle is made of hard rubber and is fitted with a detachable plug and cord for rapid interchange with other instruments.

The Giant Ophthalmoscope requires three important adjustments whenever a new lamp is introduced. The first adjustment is that of locating the filament of the lamp glove by thumb and first finger through the two side port holes of the lamp casing after unscrewing by a partial turn to the left of the knurled-ball-retaining ring. The next adjustment should be made in the interest of locating the lamp filament at right angles with the slot in the mirror. This can be done by turning the ball partially around in its socket, or by partially unscrewing the lamp in its socket. The correctness of these adjustments may be observed by noting the position of the light streak on the mirror. When the lamp is properly adjusted, the light streak made by its filament will form an exact cross with the horizontal peep opening in the mir-

ror, each intersecting the other centrally. When the adjustments have been correctly made, the knurled retaining ring may be screwed down again lightly upon the ball to insure security to the adjusted position of the lamp. The third adjustment pertains to locating the primary condensers in their required position with respect to the lamp. This is accomplished by a slight turn to the left of the knurled extension nut and sliding it either up or down in the slot as may be required to place the condensers as close to the lamp as possible, while retaining a clear circular spot when the light is projected upon a white card lying upon the desk at a distance of about two inches from the mirror. After making this adjustment the extension nut should be screwed up again tightly to position.

Should any adjustment of the condensers fail to produce a clear circular spot of light, attention should again be given to adjustment of the lamp, for when all adjustments have been correctly made, the projected illumination should produce a perfectly clear and sharply defined light spot about the size of a dime at a distance of about two inches from the mirror. If such a spot can not be obtained by means of those adjustments, the lamp globe will doubtless be found to be defective, and another lamp should be substituted. Those adjustments should be made with the lamp burning at slightly less than normal brilliancy.

The illumination given by this ophthalmoscope when the lamp is at normal brilliancy may be too intense for routine use in all eyes and may therefore be reduced somewhat unless either the Red Free or Daylight screens are employed, in which case the lamp may be brought to extreme brilliance for a short period of time without endangering the ophthalmoscope, although the life of the lamp will in consequence be materially shortened.

When using the Red Free or the Daylight screen the pupil should be dilated if the most satisfactory results are desired. However, the fundus may be clearly seen through a normal size pupil either with or without the screens when the instrument is adjusted correctly.

HIGH MYOPIA MISTAKEN FOR AMBLYOPIC BLINDNESS

Harlan P. Blaine, Opt.D.

Norfolk, Nebraska

Patient, Mrs. F. Female, age 71, came to me for refraction, reporting that she was blind in her right eye, and had been so, for the last ten years. Her case history revealed that, ten years before, while in Sioux City, Iowa, she had had a pair of glasses fitted, and the refractionist, an oculist, had informed her that she was blind in her right eye, and had been so for some time. This report did not satisfy her and later while in Omaha she consulted, at different times three well known oculists, all of whom told her the same thing. This of course convinced her that she was blind in her right eye and she let the matter rest, until her present visit. At this time she was wearing a pair of — 5.00 D. Sph., which were not satisfactory.

Upon refraction, the retinoscopy disclosed a case of myopic anisometropia, the findings being as follows: O. D. — 15.00 D. Sph. ( ) — 4.00 D. Cyl. axis 90, O. S. — 6.00 D. Sph. ( ) — 0.50 D. Cyl. axis 90. This was subsequently changed, during the subjective portion of the refraction to O. D. — 12.00 D. Sph. ( ) — 3.00 D. Cyl. axis 90, O. S. — 5.50 D. Sph. ( ) — 0.50 D. Cyl. axis 90. This correction gave her 20/30 vision in either eye, she being able to wear it with comfort. Later she returned and was given the following correction for close work: O. D. — 10.50 D. Sph. ( ) —2.75 D. Cyl. axis 90, O. S. — 2.00 D. Sph. ( ) — 0.75 D. Cyl. axis 90, which gave her normal and comfortable vision at the near point.

Needless to say, she was pleased, and has since referred me many cases

SPECIAL REPORT

VISUAL WORK IN SCHOOLS

Being a Digest of the optometric and ophthalmic literature on this subject for the year 1924, as taken from the lists of papers on Industrial Eye Work, in the CURRENT LITERATURE department appearing monthly in the Northwest Journal of Optometry. This is the first of three digests dealing with the subject of industrial eye work, the second to be a digest of the 1924 literature on Refractive Clinics and the third, the 1924 digest of literature on Refractive Work in Industrial Organizations, by

C. C. Koch, Opt. D., F.A.A.O.
Minneapolis, Minnesota

School Surveys

Ketchum describes the method of appointment for the optometrist inspector for the school system of the city of Los Angeles and gives the following outline of the type of survey used in making these visual tests. First, the External Observation, recording any deviation from a normal condition. Second, the recording of any pronounced ocular symptoms if obtained. Third, the recording of the visual acuity, both monocular and binocular. Fourth, the red glass test to determine any significant muscular imbalance. Fifth, Dynamic Skiametry at the reading distance with a quick observation of the reflex relative to moderate or high spherical or astigmatic errors of refraction. Sixth, ophthalmoscopic examination. **Johnson** outlines the survey as given to the students at Eveleth, Minnesota, illustrating the card used in recording the visual data and also the card used in notifying the parents of the visual defects of their children. **Alexander** and **Von Harten** make a visual survey on only the backward students of Salt Lake City, Utah, the school nurses and teachers deciding on those to take the examination. **Cox** suggests the formation of an optometric team to conduct visual surveys in the larger centers. The team is composed of seven optometrists, and school children can be handled comfortably at the rate of fifty an hour, which is as fast as the usual survey can be done properly.

The child is given a square of fiber board on which is clamped the survey record blank in duplicate. This he carries through the survey and the findings by each man are noted thereon. The school nurse distributes these and takes care of bringing the children from class as they are needed. Any class room or even a corridor can be used for the work.

The men are arranged around the room in the sequence of their operation so that the child may pass from one to the other without confusion. Visual acuity is taken first, both to prevent the child from memorizing the letters while waiting and to eliminate any slight fatigue which the survey may cause. This is the only phase which is subjective.

The next man examines the versions and the P. P. of convergence and is followed by the third, who notes the reaction of the visual axis under the occlusion test and the P. P. of accommodation. This gives an objective survey of the muscular status of the eyes.

The skiametric work is taken care of by two men working dynamically and the error classified as hyperopia less or more than one diopter or myopia less or more than a half diopter. Hyperopia of more than one or myopia of more than a half diopter. The survey is completed by an ophthalmoscopic examination of media and fundi.

The final step is to sum up the case, taking into consideration the findings of all preceding steps, together with any subjective symptoms which may be present and make the recommendation which they warrant.

McCallie in making visual surveys finds the Snelling letters and the illiterate "E" tests inaccurate, and in a paper on this subject describes and illustrates a series of cards, embodying the dot and ring test, which he finds more satisfactory for this type of work. **Shepard** advises more attention towards the training of children to become accurate in attaining single binocular vision, as he claims that many children find it impossible to fuse automatically, thus wasting much nerve force. He advises the examination of all backward children with stereoscopic pictures and the fusion training of those below normal.

Students Needing Ocular Attention

Dean found that thirty-five per cent of all children in schools have defective vision, and these he divided into three classes: First, students who will be permanently relieved by the correction of improper illumination; this group comprises ten per cent of the total student body. Second, another ten per cent who need the application of lenses for temporary wear. And third, fifteen per cent of the students who should use a correction constantly. Dean also found that of all our first year students, on entering school seven per cent had defective vision. Fourteen per cent of this same group had an eyestrained condition at the end of the same year, nothing having been done to prevent or correct this condition in the meantime. He further states that one-half of the failures in school life can be traced to ocular defects. **Johnson** finds that 326 students out of 2,500 needed an immediate ocular examination. This figure is somewhat lower than the usual average. However, surveys had been made on several previous occasions in these same schools, and his figures cover only new cases of refractive error discovered. The Eyesight Conservation Council of America in various bulletins issued by this organization gives the figures on the visual defects of the school children of New York City. These figures in the main coincide with those of Dean.

School Hygiene

Aronsfeld advises refracting the students before they reach the proper school age, rather than waiting until their school duties make ocular defects noticeable. He mentions the correcting of children but twelve months of age. **Carhart** claims that the effects of eyestrain are more pronounced in children than in adults, inasmuch as children are less apt to complain about their visual defects than would older persons. **Thompson** advocates the establishment of special classes for myopes, while **Levinsohn** describes such classes as conducted in Berlin. These classes are small, never more than fifteen to the class. Each seat is provided with a suitable lamp and all writing is done on individual boards with yellow chalk.

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Carhart, W. M. Better Eyes Make Better School Children. The Ophthalmic Year Book, p. 393. 1924.

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Ketchum, W. H. Optometrist Inspector Appointed for Los Angeles Schools. Optical Age. Vol. 20, No. 8, pp. 53-55. 1924.

Levinsohn, G. Berlin School for the Blind. The Ophthalmic Year Book, p. 398. 1924.

McCallie, J. M. A Critical Study of the Snellen Letters and Illiterate "E" Tests. American Journal of Physiological Optics. Vol. 4, No. 4, pp. 371-385. 1924.

Shepard, G. A. Perspective—Its Relation to Perfect Vision. (Abst.) American Journal of Physiological Optics. Vol. 4, No. 4, pp. 471-474. 1924.

Thompson, H. W. Education of Partially Blind Children. The Ophthalmic Year Book, p. 398. 1924.

ABSTRACT DEPARTMENT

Optometric and ophthalmic journal articles and reprints to be abstracted should be sent to the editor. Only papers on subjects of interest to optometrists will be reviewed in this department.

Bagwell, W. Antimetropia and the Idle Eye. Optical Journal and Review. Vol LIV, No. 4, pp. 23-24, 1924.

Bagwell in discussing cases of High Antimetropia advises the prescribing of the full correction for the better eye and the entire ignorance of the poorer eye, stating that such great differences in the two eyes makes it next to impossible to give the patient comfortable binocular vision, most patients refusing to stand for the months of discomfort necessary to stimulate the fusion faculty sufficiently to attain these ends. C. C. K.

Davis, A. Nystagmus. The Optician (British). Vol. LXVIII, No. 1759, p. 310, 1924.

Davis, writing in London, mentions examining hundreds of miners, many of whom suffered from nystagmus and astigmia, and suggests the compulsory eye examination of miners, many of whom have accidents due to defective vision. He cites one case, the miner being corrected as follows: O. D.—26.00 D. Sph, O. S.—20.00 D. Sph, his corrected visual acuity being 6/18 yet the fellow refuses to use his correction while at work. C. C. K.

Edridge-Green, F. W. Temporary Color Blindness. (Abstract from the Lancet), Eye, Ear, Nose and Throat Monthly. Vol. 3, No. 4, p. 230. 1924.

Edridge-Green writes that although congenital color blindness has chiefly occupied the attention of refractionists, it is well known that color blindness may be acquired through disease or injury. In the past these cases have been regarded as permanent. However, this is not necessarily the case, as it may be purely a temporary condition. He further states that the color sense, even with normal sighted persons, varies from time to time according to the condition of their health. Illustrative cases of temporary color blindness are given with the abstract. C. C. K.

Greenwood, A. The Non-Operative Treatment for Cataract. Eye, Ear, Nose and Throat Monthly. Vol. 3, No. 10, pp. 555-557. 1924.

Greenwood discusses the four general forms of non-operative aids for cataract cases, these being, first, the hygienic treatment, which consists of a carefully directed reduction of any high sugar content in the blood stream, advice upon the proper use of eyes and the careful selection of corrective lenses, frequently changed. Second, the use of local applications, in the forms of washes, ointments and injections. Third, the use of electricity, radium and the X-ray. And fourth, the use of lens antigen, the principal drug used being dionin. Of the four forms of treatment, the first and last give, according to Greenwood, the best results, though none are at all positive. C. C. K.

Jackson, E. Correction of Anisometropia. American Journal of Ophthalmology. Vol. 7, No. 10. 1924.

Jackson, in a paper on correcting the refractive defects of anisometropia recommends the full and most accurate correction for the better eye and correcting the other eye just as far as binocular vision will permit. For those patients where the visual acuity is equal, he suggests the full correction of the eye most hyperopic, or the eye less myopic, with the distance Rx in mind and then correct the other eye for near work. This latter method he also adds, works for presbyopic cases as well. C. C. K.

Kilner, F. Imbalance of the Ocular Muscles. The Refractionists (British). Vol. 14, No. 163, pp. 13-14, 1925.

Many texts advise the equal distribution of prism power when added to a correction, but this procedure is taken exception to by Kilmer, who advocates making the tests for duction, first with the rotary prism before one eye and then with it before the other,

and prescribing accordingly, the weaker eye receiving the stronger prism. Furthermore he states that prisms should never be prescribed until all phoria and duction tests have been made and verified on at least three occasions. C. C. K.

McFadden, F. Dangers of Motor Car Driving. The Connecticut Optometrist. Vol I, No. 9, pp. 5-9, 1924.

McFadden describes the various ocular defects which should bar motorists from driving and suggests that any person having an acuity of vision of less than 33% uncorrected, and 50% corrected should be refused a license to drive. C. C. K.

Mann, S. D. Transillumination as Applied to Optometry. Optical Journal and Review. Vol. LIV, No. 26, p. 24. 1924.

While there is nothing new in the idea that transillumination should become part of the routine refraction, nevertheless Dr. S. D. Mann, a well-known dentist of Chicago, in an address before the Chicago Optometric Society suggested a new phase of transillumination for the optometrist. His suggestion is, that inasmuch as many ocular disorders originate with abscesses in the oral cavity, that it would be advisable for the optometrist to transilluminate this area, using for this purpose a right angle dental lamp. The technic being to place this lamp behind the teeth at their roots, thus allowing the light to pass through. As in sinus transillumination, a clear pink indicates a healthy condition, a dark shadow indicating an infection.

C. C. K.

Maybee, W. G. Advice That Optometrists May Give to Their Patients. The Canadian Optometrist. Vol. 6, No. 11, pp. 334-335. 1924.

Maybee, in a splendid paper, outlines the duties of the optometrist towards his patient. Among these he suggests the use of the following hygienic notes, when at all applicable.

"Do not read in bed or in a recumbent position, for it is almost impossible to hold the reading matter and the eyes in a proper position."

"Office workers or those engaged all day at close work should make a practice of raising their eyes from the work at short periods and fixing at distant points for a moment to allow relaxation."

"Reading or close work should not be done when the reader is tired or feels drowsy. The muscles of the eye are naturally more or less relaxed and must be driven to their work rather than doing it voluntarily and normally."

"Avoid cheap books badly printed on poor paper."

"Reading on trains, street cars or motor busses should not be indulged in owing to the motion, vibration, and usually inferior lighting arrangements."

"Newspaper reading should be reduced to a minimum owing to the poor print and paper."

G. L. Du P.

Mignot, A. Insuffisance des Droits Internes-Exophorie. The Journal, Association des Optometrists et Opticiens de la Province de Quebec (French-Canadian). May, 1924.

Mignot advises the single dot test for muscular imbalances at the near point. The test is simply made. A card with a black dot in the center of it is placed in the adjustable reading card slide of the phorometer, 13 inches before the patient. A prism base down is next placed before the patient's right eye. This prism must have sufficient strength to cause a vertical diplopia. The patient then sees two dots, the upper by the right eye and the lower by the left. All that is now necessary is to aline the dots with prisms, thus determining the phoria at the near point. Mignot also advises the use of prisms base in, when prescribing for exophoric cases.

Translated into English and Abstracted by G. L. DuPlessis.

Peckham, R. M. The Cross Cylinder as a Check Test. The Connecticut Optometrist. Vol. 1, No. 1, pp. 5-8. 1924.

Peckham, in a paper on the use of the Cross Cylinder, describes an inexpensive and satisfactory method of making the device and then goes into great detail outlining the various uses to which it can be put. According to Peckham, it is a valuable piece of diagnostic equipment as a final subjective check test, as a check of any differ-

ences of accommodative power in the two eyes, as a check for premature presbyopia, to prevent overcorrection in both myopic and presbyopic cases and as an aid in the determination of the axis of the cylinder for the correction of astigmia.

G. L. Du P.

Roman, H. Blue Lenses in Cataract Cases. The Optical Journal and Review. Vol. LIII, No. 23, pp. 31-32. 1924.

In discussing the use of blue lenses to retard the development of cataract, Roman declares that his investigations lead him to believe that in some cases of senile cataract in their incipient stages this technic will prove of value. This form of treatment is of no value, however, in cases arising from diabetes, injury, etc. Blue shade No. 1, and sometimes No. 2 is prescribed, never in bifocal form.

G. L. Du P.

Scholler, P. Visual Survey of Automobile Drivers. The Michigan Optometrist. Vol. 3, No. 1, pp. 1-2, 1925.

Scholler strongly advises optometric societies to engage in the clinical work of making visual surveys at Auto Shows. A booth can be secured for this purpose and proper instruments supplied to carry on the survey work, which, according to Scholler should consist of taking the driver's monocular and binocular visual acuity, both corrected and uncorrected and also give them a color test for red, blue, green, and yellow. If time permits a maddox rod test to determine the presence or absence of heterophoria may be included. Scholler also shows a card which is to be filled out by an assistant and given to the applicant informing him as to the condition of his eyes.

C. C. K.

Sheard, Charles. Instantaneous Photomicrography of Skin Capillaries in the Living Human Body. Science. Vol. LV, No. 1557, pp. 409-410. October 31, 1924.

Dr. Charles Sheard, of the Mayo Clinic at Rochester, Minnesota, has taken what he believes to be the first photographic records of the skin capillaries in the living human body. These photographs are so taken by means of strong filtered illumination with the aid of a camera so devised that the magnification could be regulated from 10 to 100. With this type of photomicrography one can trace the course, and measure the flow of the blood stream as it passes through these minute connections between the arteries and the veins. The photographs are taken at will there being no discomfort to the patient, the time required for the exposure being one-tenth to one-hundredth of a second.

C. C. K.

Smith, J. W. Uses of Subjective Retinoscopy. Optical Journal and Review. Vol. LIV, No. 24, pp. 29-33. (Ill.) 1924.

Smith, in a paper on what he terms Subjective Retinoscopy, describes an instrument which he calls the autoretinoscope. This instrument when placed before the eye works on the principle of conjugate foci. The device consists of an ordinary stenoscopic slit with a movable bar, the bar placed at right angles to the slit. The device is used monocularly, the patient fixing at six meters a large illuminated ground glass diaphragm in a somewhat darkened room. The patient indicates the movement of the shadow as cast upon the retina by the moving of the bar. The autoretinoscope is of particular value, according to Dr. Smith, in determining the axis, when high degrees of astigmia are present.

C. C. K.

Swain, Wm. Some Time Values in Vision. The Optician (British). Vol. LXVIII, No. 1760, p. 315. 1924.

Swain, in discussing the time required to perform various acts of vision gives the following figures regarding reading. In viewing the ordinary news print it has been found that the forward jerk (left to right across the line) occupies 25 thousandths of a second, while the return journey (right to left) takes but 40 thousandths of a second. The pauses necessary for fixation varies with different patients from 100 to 400 thousandths of a second, children taking somewhat longer.

E. O. F.

Taylor, I. The Medical Treatment for Cataract. (Abstract from the Lancet.) Eye, Ear, Nose and Throat Monthly. Vol. 3, No. 4, pp. 229-230. 1924.

Taylor, discussing the non-surgical treatment for cataract, describes at some length, giving illustrative cases, the technic of Doctors Badal and Dor, who, working upon the assumption that cataract is the result of the hydration of the lens, have had prepared for their use a calcic-alkaline iodide ointment, the use of which has given them some splendid results. In this work as in all treatment work, it is advantageous to start the treatment early in the course of the disease, but cases are cited in which vision was improved from 25 to 90 per cent. E. O. F.

Tomkinson, J. G. Alopecia Areata and Strabismus; Familial Groups. The Refractionist (British). Vol. 13, No. 162, pp. 263-265. 1924.

In an article dealing with cases afflicted with both this skin disease (bringing on a loss of hair, in patches) and strabismus, Tomkinson cannot help from pointing out the fact that, although he like most authorities does not believe in hereditary strabismus, nevertheless the following cases point strongly to this conclusion.

Case 1. A paternal grandfather, a paternal aunt, a paternal female cousin, and the mother with her three children all squinted.

Case 2. A mother who squinted, was neurotic, suffered from alopecia areata and bore eight children, all of whom were squinters. It was also interesting for the author to note that of these children six of them also suffered from alopecia areata, and one had very thin hair. Five of these children were very nervous, one of them being a somnambulist. E. O. F.

Wells, D. W. The Value of Fusion Training and Methods for Its Development. American Journal of Ophthalmology. Series 3, Vol. 8, No. 1, pp. 46-53, 1925.

Wells points out the importance of the Fusion Faculty in guiding binocular movements and emphasizes its value in the determination of the third dimension (depth). He points out the need for the proper muscular development in cases of esophoria and exophoria, by the treatment through decentered lenses with the sterescope and bar-reading. With this method he builds up the muscular innervation of the interni until it can overcome 90 prism dioptres base out at the near point. He gives a report on 236 muscle treatment cases, 75% of which were cured or relieved. C. C. K.

BOOK NOTICES

New Books for review should be sent to Dr. E. O. Fjelstad, Red Wing, Minnesota. Only Books of such nature as to be of interest to optometrists will be used in this department. Optometric and Ophthalmic publications that have been issued in the past and which are still procurable through their publishers will also be reviewed, from time to time, as space permits.

SENILE CATARACT. By W. A. Fisher, M.D., F.A.C.S. Pp. 250. Illus. 160. Chicago Eye, Ear, Nose and Throat College, 1923.

It is high time that publishers of books on the eye should learn that a glossy finish paper is far from the correct paper to use. The task of reading what is printed on glossy paper is too much to ask of any one, no matter what kind of "opia" one may have. In fact, only a few sentences can be read at a time, as prolonged reading is uncomfortable.

This book on Senile Cataracts carries one through the various phases of cataract etiology, diagnosis and operation. Primarily a book for eye surgeons, by surgeons, it bears much of interest to the refractionist.

E. O. F.

CONGENITAL WORD-BLINDNESS. By James Hinshelwood, M. A., M. D., F. R. F. P. S. Glasg. Late Surgeon to the Glasgow Eye Infirmary and Lecturer on Ophthalmology in the Glasgow Western Medical School. 112 pages, 3 plates. The H. K. Lewis & Co., Ltd., London, 1917.

Congenital Word-Blindness is a subject which is obtaining more and more attention from refractionists and educators. It is recognized as one of the congenital defects of childhood and its correction is outlined fully by Hinshelwood. The Acquired and Hereditary types of word-blindness, as well as the Congenital forms are treated in the text, and the student is given careful explanation as to the diagnosis, prognosis and treatment (which consists of careful and painstaking instruction) of this defect of the visual centers of the brain. This book makes a splendid addition to an optometric library.

C. C. K.

TECHNIC OF REFRACTION. By Thomas G. Atkinson, M. D. Auto of "Oculo-Refractive Cyclopedia and Dictionary," "Essentials of Refraction," "Functional Diagnosis," etc. Editor, "The Eye, Ear, Nose and Throat Monthly." 94 pages. Illustrated. The Professional Press, Publishers, Chicago, 1922.

Atkinson has given the optometric world an encyclopedia of Refractive instruments. In this work he covers all of the instruments used in every day eye examining, by refractionists. He first describes the instrument, then gives its use, and finally describes the proper technic to be required to get the best results from its use. The book is a worth-while reference book.

C. C. K.

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Original papers, scientific communications and correspondence should be addressed to Editor. Books for review should be sent to Dr. E. O. Fjelstad, Red Wing, Minnesota. Reports of society proceedings in Minnesota should be sent to Dr. A. R. Burquist, in North Dakota to Dr. A. S. Anderson, and in Nebraska to Dr. A. M. Skeffington. Special Reports should be sent to Dr. A. H. Nordland. News items should be sent to Dr. H. B. Kollofski.

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JACK I. KURTZ, Room 209, Yeates Building, Minneapolis, Minnesota.

The Journal has no objection to the reprinting by other magazines of any of its articles, providing such reprints are properly credited to the Northwest Journal of Optometry

RESEARCH WORK AND OPTOMETRY

One of the outstanding faults of the profession is the lack of interest shown by the average optometrist in the scientific phases of ocular work which lie outside the immediate field of an ocular examination. Too many of our men are content to sit back and let the studying, the "digging" and the compiling to others. This is unfortunate, inasmuch as there are so many ocular problems as yet unsolved, but could optometry bring in the satisfactory solutions to several of these it would materially add to the profession's standing in the eyes of the scientific world.

To be sure, from time to time optometrists do add materially to what is known on this intricate subject of ours, but considering the numbers of optometrists, the amount of research work done is negligible, and could the men understand the satisfaction that comes with having given something of scientific value to the world, more would, we believe, be tempted to try.

To illustrate what can be done by optometrists, using as an example a local man, Dr. Jack I. Kurtz, optometrist of Minneapolis, who during the recent world war was connected with one of the U. S. base hospitals at Camp Dodge, Iowa. While here, it became one of his duties to assist in checking over the malingering cases which were received at camp during the draft periods. Kurtz, while a graduate of Ohio State University, naturally knew little of the various malingering tests, inasmuch as in the average optometric course these matters are passed over in a cursory manner. He at once began to study this problem and found it a difficult one; a little material could be found here,—a little there,—a mention of the subject in this text, and an omission of it in that, but nothing could be found giving a complete digest of the necessary data. The work was nevertheless accomplished and upon leaving the service Kurtz resolved that, upon the first opportunity, he would compile his experiences for the benefit of his colleagues.

This opportunity came shortly in the form of an invitation to prepare a paper for the scientific section of the Minneapolis Association of Optometrists. This invitation was accepted and a few months later Dr. Kurtz presented to this group a paper entitled Malingering—Pretended Blindness. This paper was later printed by Dr. Charles Sheard in his American Journal of Physiological Optics (Vol. 3, No. 4). Here of course the matter seemed to end. However, shortly after the paper appeared in this journal Dr. Sheard, the editor, received a request, from the government, for permission to reprint this paper. This of course was granted, the paper again appearing in the U. S. Naval Medical Bulletin, 1923, pp. 449-456, for distribution to the ophthalmological section of the medical department of the navy, and was again reviewed and abstracted in the Ophthalmological Year Book for 1924.

Now none of our optometric readers should sit back and say—FINE—a splendid recognition for optometry. For it was nothing of the sort. It was a recognition of ability, the optometric portion of it being a secondary matter. BUT—optometry does benefit because it is associated WITH ability, and it is in this way that our profession can be assisted and that many of our ocular problems solved. What Kurtz has done can be done by many others, and at this time we urge our readers to spend more time in the serious study of the various phases of optometric science. C. C. K.

OPTOMETRIC SERVICE

As a practitioner of a healing art, the optometrist has but one thing to sell, and that is service. The material that is used in the form of glasses is incidental to the service that these glasses are to render, and though it is necessary of course that this material be of the highest quality, it is even more necessary that the service behind such material be of the best. Only the most painstaking refractions should be completed and nothing should ever be prescribed until all question of doubt has been eliminated.

Just as soon as the optometrist attempts to sell "price" he puts himself in competition with the first rival who produces an imitation substitute at a lower figure—he lets his competitor (not colleague, among this type of practitioner) establish his selling price.

On the other hand, the optometrist who sells quality and service automatically eliminates all such competition and has for his only rivals his colleagues of the same class and grade. This type of optometric practitioner teaches his patients to look to him, and the work he does, as a guarantee of quality. C. C. K.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

ANNUAL CONVENTION OF THE MINNESOTA SOCIETY

The annual convention of the Minnesota State Association of Optometrists will be held in Minneapolis on February 16th and 17th, at the West Hotel.

The program will be opened by Dr. J. L. Kubicek, optometrist of Waseca, president of the society. Dr. L. L. DeMars, optometrist of Minneapolis, will welcome the visiting optometrists to the convention and will then introduce the chief speaker of the year, in the person of Dr. Gordon H. Gliddon of Rochester, N. Y., who will speak on the Physiology of Vision and also on the subject of Color Vision. These subjects he will cover as follows during the two-day session.

Physiology of Vision

Starting with the subject radiant energy, he will show how light is affected by the different surfaces of the

DR. GORDON H. GLIDDON

eyes and how the image is formed on the retina. He will then speak on the effect of the aberrations of the eye and show how the image looks with the eye and a corrected lens, using for this, a balopticon and slides. He will then show the changes at the retina and speak of the modifications which take place when physical energy is transformed into nervous energy. Then take up the path of the nerve fibers to the brain, lead to binocular vision and monocular vision. This topic could really be called, "How we see," and should be of great interest to every practitioner. He will also speak on

Color and Color Theories

In this he will take up the subject of wave length, color as compared with the other forms of energy, and next the radiant energy spectrum and show if possible the mixing of colored lights to produce white light. Following this he will take up the subject of relativity of color, showing the after effects, the subjective effects and the after image contrasts, with a discussion on the Young-Helmholtz and Ladd-Franklin color theories, showing finally that neither of these theories satisfies existing conditions. This talk will close with a discussion of the value of color in estimating distances, and the optical condition of the eye as regards to color vision.

Dr. Roy S. Dean, optometrist of Duluth, Minn., and Dr. Gordon H. Gliddon, will serve as clinicians at a clinic arranged for 3 p. m. on Monday. Dr. Dean was one of the clinicians at the annual A. O. A. convention last year at Kansas City and promises us something of value at this clinic, which will be fully equipped by the following Minneapolis Jobbers: American Optical Co., N. P. Benson Co., Geneva Optical Co., Twin City Optical Co. and the Walman Optical Co.

At 6 p. m. on Monday a stag smoker will be held during which the officers to serve for the following year will be elected, following this election the society will hear from several of the leading legislators now in session at St. Paul. An entertainment will follow these talks and a light supper will probably be served.

The following day both Dr. Gliddon and Dr. J. A. Heidbrink will talk. Dr. Heidbrink, a well known dentist of Minneapolis, has for years studied the effects of focal infection and he will go into detail as to what, in the mouth, constitutes a focal infection and its relation to ocular disorders. The society is indeed fortunate in securing two such high grade men to address them at this convention and the arrangement and educational committees feel that this educational program will be of great interest to all optometrists. Following these talks will be the usual business sessions, after which the annual banquet will be held.

The chief speaker at the banquet will be Dean H. C. Walker of Duluth. Dean Walker is coming to us on the invitation of Dr. Roy S. Dean of that city and will give us a splendid banquet address, which will be followed by the customary entertainment and dance.

To briefly summarize our 1925 annual convention program, we find we have Dr. Gordon H. Gliddon, of Rochester, N. Y., making several addresses on Color Vision and on the Nervous Mechanism of Vision. Dr. J. A. Heidbrink of Minneapolis speaking on Focal Infections. Dr. Roy S. Dean of Duluth as chief clinician, and Dean H. C. Walker, also of Duluth, as speaker of the evening for the banquet. Thus the arrangement of this convention is complete and members of the Minnesota State Association of Optometrists should find this convention both instructive and entertaining, and all members are urged to attend.

Southern Minnesota Society Also to Meet

The Southern Minnesota Association of Optometrists will hold its quarterly meeting at a noon luncheon at the Nicollet Hotel, Minneapolis, Tuesday, February 17th. This is at the time of the regular state meeting and it is urgently requested that all southern Minnesota optometrists reserve the noon hour of this day for the southern Minnesota meeting.

Dr. Roy S. Dean, second vice-president of the state association and chairman of the educational department, will speak on the important question, "Vision in National Safety Problems."

Southern Minnesota optometrists, who have not as yet attended any of the local meetings of this society, are especially invited to this meeting according to Dr. Norden, the Secretary.

The program in detail follows:

PROGRAM

Monday, February 16, 1925

9:00 A. M. to 10:30 A. M.
Registration.
Payment of dues.
Banquet tickets.
Badges.

10:30 A. M.
President's Address by Dr. J. L. Kubicek, Waseca.

10:45 A. M.
Welcome Address by Dr. Louis L. De Mars, Pres. Minneapolis Optometric Association.

11:00 A. M. to 12 M.
Lecture on "Color and Color Theories" by Gordon H. Gliddon, Ph.D., of the Rochester School of Optometry, N. Y.

2:00 P. M. to 3:00 P. M.
Talk on "Eye Clinic Instruments and How to Use Them."

3:00 P. M. to 4:30 P. M.
"Eye Clinics" conducted by Dr. Roy S. Dean, Duluth.

6:00 P. M. to 9:00 P. M (Dinner).
Business Session. Dr. J. L. Kubicek presiding.
Secretary's Report by Dr. J. I. Kurtz.
Committee Reports.
Election of Officers.

9:00 P. M. to 11:00 P. M.
Smoker, Entertainment, and Talks by Leading Members of the Legislature.

Tuesday, February 17, 1925

9:30 A. M. to 10:30 A. M.
Lecture, "Nervous Mechanism of Vision" —Part 1, by Dr. Gordon H. Gliddon, Rochester, N. Y.

10:30 to 12:00.
"Illustrated Lecture on Focal Infection and Its Relation to Eyestrain" by Dr. J. A. Heidbrink, Minneapolis.

2:00 P. M. to 3:30 P. M.
Lecture, "Nervous Mechanism of Vision" —Part 2, by Dr. Gordon H. Gliddon, Rochester, N. Y.

3:30 to 4:00 P. M.
Reports of the Northwest Journal of Optometry by
Dr. A. H. Nordland, Chairman of Board.
Dr. C. C. Koch, Editor.
Dr. J. I. Kurtz, Business Manager.

4:00 P. M. to 5:00 P. M.
Unfinished Business.

6:30 Banquet, West Hotel.
Principal banquet speaker, Dean Harry G. Walker, Duluth.

BENJAMIN FRANKLIN MEETING

Minneapolis Society

The Minneapolis Association of Optometrists, on the evening of the 21st of January met for the first time in 1925. Dr. L. L. DeMars, the president, was in the chair and announced that the society would, in honor of Franklin spend the evening reviewing his life, members having prepared papers on various phases of his work. Dr. DeMars then read the first paper on Franklin as a boy, covering his life from the time of his birth until he ran away from his brother's home to become a printer. Dr. O. E. Worman then took up the subject and described his stay in Philadelphia and the 18 months he spent in London, with his subsequent return and the formation of the foremost newspaper in the state of Pennsylvania. Dr. E. Markhus then spoke of Franklin's work as a scientist, briefly describing his work with electricity, his nature work and his interest in establishing several scientific societies which have been great aids in our progress since his time. He ended his talk by showing a pair of bifocal glasses patterned after those made by Franklin for himself. Dr. R. Munns next spoke telling of Franklin's experiences as a soldier with Washington and the British and reviewed his skill in aiding these forces. Dr. Munns then read an original letter by Franklin written to Howe in which he takes Howe to task for his attitude towards the colonists. At this point Dr. E. Lofgren took up the discussion and read a paper written by Dr. M. S. Lockwood, he being unable to attend. Dr. Lofgren's paper dealt with Franklin as a statesman and a member of the representatives before the colonies were united. Dr. C. Lundgren then spoke of Franklin's part in forming the Union and showed the tremendous influence he had on building our country on its present firm foundation. Dr. C. Nelson concluded the Franklin program by reading a 40-page paper on Franklin's work in France as an envoy of the colonies, ending with his death at the age of 84. The program was well worth while and was enjoyed by the 25 men present.

The society endorsed the survey plan that was before it during a short business session, also discussing radio talks.

HOLIDAY MEETING OF THE MINNESOTA ASSOCIATION

The semi-annual meeting of the Minnesota State Association was held recently at the Elks Club, Minneapolis. The attendance was splendid. After the dinner the ballots for the state board candidates were counted. The following four members in the order named received the highest number of votes: Drs. E. H. Kiekenapp,

L. T. Arduser, J. I. Kurtz, Louis L. De Mars. Their names have been recommended to the governor for his consideration in appointing members to fill the two vacancies on the state board of examiners.

Dr. Roy S. Dean, chairman of the educational committee, reported his securing some very prominent educators to appear on the program at the state convention to be held February 16th and 17th at the West Hotel, Minneapolis. It was decided to hold a post-graduate clinic at the state convention and have Dr. R. S. Dean of Duluth act as clinician. The secretary was instructed to apply to the A. O. A. for clinic aid. The national association pays to the state association $1.00 for each paid-up member for the current year to help defray the expenses of conducting clinics.

Drs. Nordland and Kiekenapp reported on the legislative work of their committee. A resolution was adopted urging the state interim committee to leave the Optometry Board independent and not consolidate it with other boards. It was pointed out that the Optometry Board does not draw any funds from the state treasury.

Dr. J. I. Kurtz, secretary of the state association, sent out a bulletin to the members urging them to attend the convention and urged them to take advantage of the educational opportunities offered there in the form of lectures and clinics. He also urged the members who have not as yet paid their dues for the year 1925 to do so immediately. He pointed out that in order for the state association to get clinic aid from the national association the individual members MUST have their dues paid up for the current year. Most of the members have already paid their 1925 dues and it is expected that the membership will be fully 100 per cent paid up before the convention. The officers are very much pleased over the enthusiastic response from the membership upon this request for co-operation, and they look forward to a very active year.

J. I. KURTZ, Sec'y.

NEBRASKA CLINIC COMMITTEE REPORTS

The clinics for the year in Nebraska are getting under way. We have practically completed arrangements for holding the first one at Broken Bow, the second week in February, and have been corresponding with a view of holding one at Alliance (a little **pep**, Dr. Bauman!), and also are trying to interest the Lincoln bunch in an AUTO CLINIC.

We want to hold the full five this year, and the money is available to pay about one-half of the total expenses of the five clinics. We held one in Norfolk last year, and one in Fremont, and we had no state or national aid; and it sure paid us to do it. Just a little effort is all it takes. York has also been given the opportunity of a clinic, but it is too early to know for certain.

We would like to hear from two more towns that would like a clinic. Just tell us you want one and we will do most of the work.

Through the courtesy of Riggs Optical Co. and the American Optical Co., all the equipment needed has been made available for use at these clinics. Oculists are being given the opportunity of participating, although that is up to the local men to decide.

We have one of the films from the National Association, which will be used unless it is recalled before the clinics are held. Any of the men in the state that can get their theatre to run this film, write me at once.

Come on, fellows, ALTOGETHER —A LITTLE PEP.

HARLAN P. BLAINE,
Chairman Clinic Committee.

PRESIDENT'S BULLETIN

Nebraska Association of Optometrists
J. M. Perrigo, Opt. D.

As president of the Nebraska Association of Optometrists, I wish at this time to make an appeal to Nebraska optometrists for their full and hearty co-operation in carrying out plans for the advancement of optometry which the state officials have in mind.

The fact should be borne in mind by every practising optometrist that anything that has a tendency to lower the opinion of optometry in the minds of the general public not only hurts optometry but hurts each and every practising optometrist. This being the case, the price-cutting warfare that is being carried on by certain optometrists in the state is doing more damage and hindering the advancement of

professional optometry more than all other causes combined. The fact that several of these men who are engaged in this cut-price war have been for a good many years considered representative men in their work makes the damage done all the greater. If these men do not, before very long, compose their differences and desist from trying to pull the temple down about their heads, state and national associations should try and bring some pressure to bear to bring about a discontinuance of such unwise practices.

The officers of the Nebraska Optometric Association are trying to carry out a constructive program for the current year and if they meet with the co-operation of the registered men in the state we believe that considerable progress will have been recorded before the close of the fiscal year. There are many registered men in the state who seem to expect the officers to perform miracles in the way of preventing illegal practice and prosecuting the same and also expect legislation to be put through for their benefit and protection, yet they will not contribute one dollar for the accomplishment of these objects. They seem to think that association officers only need to wave a magic wand to accomplish anything that they may desire. If those optometrists who are not members of the association would put away their hammers and sit down and write the secretary a check for ten dollars and forward it immediately, results would very soon begin to be seen and felt.

Secretary Garland reports the addition of several new members, but there is not yet nearly the percentage of registered men belonging to the association which there should be for the accomplishment of real results, and moral as well as financial support is what is needed.

Recently this office got out a letter to school boards calling their attention to the qualifications of optometrists for making school examinations. Several association men took advantage of this and requested copies of these letters to be sent to their school officials, which was done, and which cannot have failed to do some good, even though the direct results at the time in some cases have been disappointing.

The committee of education, Skeffington chairman, is working on matters to be brought to the direct attention of legislators over the state.

The Clinic committee, Blaine of Norfolk chairman, are making plans to hold several clinics during January, February and March at points where resident optometrists will co-operate and where they will be most easy of access to surrounding territory.

It is planned to hold one of these clinics, probably the largest one, at Lincoln during the legislature, if those in that immediate vicinity who are most interested will give their hearty co-operation and support to such a clinic.

To sum up the whole thing in a nutshell, it simmers down to just a question of whether united we will stand or divided we will fall. Most of the members of the association are co-operating heartily and it is now up to those who are simply passengers, riding on the optometric train without paying, to come across and pay their ten dollars per year into the association and help support and protect the organization that is making it possible for them to continue in practice.

SECRETARY'S LETTER TO SCHOOL TEACHERS

North Dakota Optometric Association
A. S. Anderson, Opt.D.

The following letter is the first of a series of letters to be sent to school teachers in North Dakota, by our state organization. It is sent only to teachers in counties where the association has a paid-up member.

ARE YOU USING THESE WORDS CORRECTLY?

An OPTOMETRIST (pronounced op-tom'-e-trist) is a specialist in examining eyes and prescribing correction. The correction prescribed is usually in the form of glasses but not always so. In cases where weak ocular muscles are found to be the cause of eyestrain, the correction prescribed is a series of muscle exercising treatments conducted in the optometrist's office, with the aid of instruments of mathematical precision. An optometrist can readily determine by his examination whether disease or eyestrain is the cause of the eye trouble. If the eyes are found to be diseased the patient is sent to a physician for treatment. An optometrist does not treat diseases or practice medicine in any form. He specializes in helping defective (not diseased) eyes, devoting his whole work to that subject.

An OPTICIAN is a mechanic who grinds

lenses and actually makes the glasses from the prescription furnished him by the optometrist. An optician bears the same relationship to the optometrist as the pharmacist bears to the physician.

An OCULIST is one who treats diseases of the nose, throat, eyes and ears, and examines eyes for glasses. He seldom specializes in fitting glasses because his training and practice have to do largely with the treatment of disease, which has little in common with the fitting of glasses.

"TAKE YOUR EYE TROUBLES TO AN OPTOMETRIST, THERE IS ONE NEAR YOU."

OPTOMETRISTS COMBAT MAIL ORDER "SPEX"

Dr. C. J. Larson, optometrist of Bemidji, Minnesota, has written and had published some splendid material advising the public on the hygienic care of the eye, and warning his readers regarding the use of glazed or Mail Order Spex. The last article appearing as an editorial in the Bemidji Daily Pioneer on December 29th, 1924.

The Minnesota State Secretary will mail to any optometrist copy similar in character to that mentioned above, to be released in the smaller publications circulating throughout the state. This is a splendid method of combating this evil and Dr. Larson is to be congratulated on the good work he is doing, along this line, in the northern part of Minnesota.—(Editor, Northwest Journal of Optometry.)

NEWS ITEMS

Dr. G. S. Dunlap, optometrist of Lincoln, Neb., was called, on New Years Day to the bedside of his father, D. S. Dunlap of Woodbine, Iowa. The elder Dunlap passed away on January 4th. Optometrists of the Northwest deeply sympathize with Dr. Dunlap in his great loss.

Dr. J. M. Perrigo, optometrist of Fremont, president of the Nebraska Optometric Association, is taking a month's vacation in Florida. He writes that he is planning a motor clinic as soon as he returns. This clinic to be held in Lincoln.

Dr. A. M. Skeffington, optometrist and clinician of Kearney, Neb., put on a two-day clinic at the Sherman Hotel, Chicago, on the 19th and 20th of January. This refractive clinic was arranged by the Illinois State Association of Optometrists, and held in conjunction with their annual convention.

Dr. A. C. Hoffman, optometrist of Minneapolis, has attended the same convention in his official capacity as A. O. A. Director of Public Information. He also spoke before the Milwaukee society on his way home.

Leslie W. Myers, Opt.D. of the Benson Optical Co., Minneapolis, made the announcement of his wedding on January 2nd He was married at Milbank, S. D., on August 16th, but managed to keep it secret until this date. His many friends in the Northwest are, of course, immensely pleased and join in wishing the couple well.

Two Minneapolis optometrists have recently moved into the Wilmac Building. Dr. Karl Knapp moving to the fourth floor and Dr. E. Lofgren to the third. There are now six optometric offices in this building. Dr. Guy L. DuPlessis, of this city, recently announced the opening of his office in the Yeates Building.

Word has been received that Dr. T. J. Howe, optometrist of Louisville, Ky., recently died while attending the Mayo Clinic at Rochester, Minn. Dr. T. J. Howe was the father of Dr. Tom Howe, now a member of the Board of Directors of the A. O. A. and the profession extends its sincerest sympathy to the Howes.

Dr. Chas. P. Elliott of Sheldon, N. D., bought out the equipment and practice of Dr. G. A. Carlson of Valley City, N. D. Dr. Carlson and family have moved to Long Beach, Calif.

Dr. Mary Dennis, of Page, has been granted a license to practice optometry in North Dakota.

Dr. O. M. Varnson, of Fargo, N. D., was married in Chicago on November 25th to Miss Elsie Bauer, who for the past three years was supervisor of music in the Fargo public schools. Dr. and Mrs. Varnson are spending the winter at Lynn Haven, Fla.

Dr. A. S. Anderson of Fessenden, N. D., left January 14th for a month's visit in California.

Dr. C. Dixon, optometrist of North Platte, Neb., was recently operated on at Omaha and is recovering nicely.

The Nebraska State Board of Optometry had a conference at Lincoln during the past month. Drs. Jones, Kingsley and Dunlap being present.

Drs. Colberg and Knutson, officers of the South Dakota Optometric Association, recently mailed to the members of that society a six-page bulletin dealing largely with the coming convention of that organization. Dr. A. M. Skeffington, optometrist of Kearney, Neb., is to be the chief clinician at this meeting.

During the past month the One-Piece Bifocal Lens Co. of Indianapolis, Ind., placed in the mail the ULTEX MAGAZINE. This magazine is well worth writing for, inasmuch as four of its articles are splendid. L. W. Bugbee writes on Segment Sizes in Bifocal Lenses. L. Willis Bugbee writes on Adapting Invisible Bifocals to Anisometropic Cases; a paper on Tinted Glass for Ophthalmic Corrections is good, and Guy Henry again gives us some information on the visual defects of the nation. From the title page we judge the magazine will appear six times per year.

CURRENT LITERATURE

These are the titles of papers bearing on optometry, or papers written in such a manner as to be of interest to optometrists. These papers appear in various optometric and ophthalmic publications, as indicated. The papers have been grouped under appropriate heads, and in each group arranged alphabetically, usually by the Author's name in **heavy face type.** The abbreviations mean: (Ill.), illustrated; (Pl.), plates; (Abst.), indicates that it is an abstract of the original article; and (Dis.), that discussion is published with paper.

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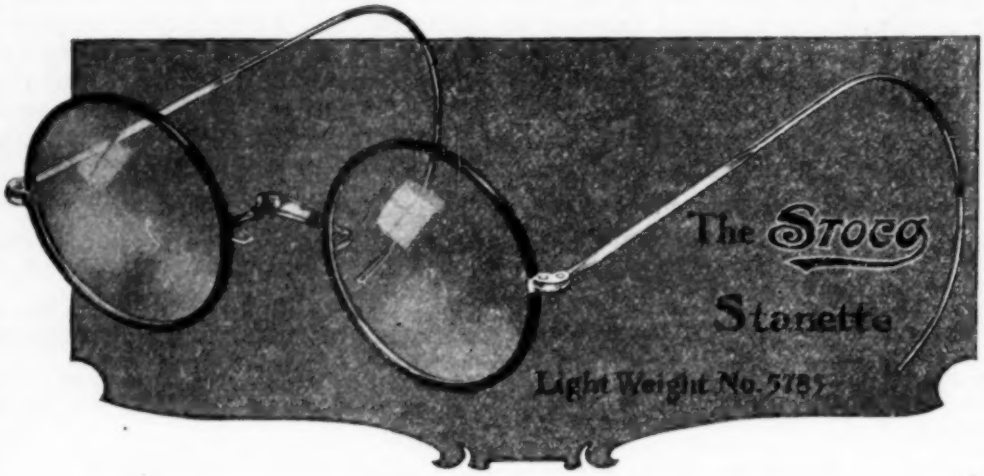

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